

Current Status of All Claims in the Application:

1-5. (Canceled)

6. (Currently Amended) A head stack assembly for a disk drive, the disk drive including a storage disk, the head stack assembly comprising:

an actuator arm;

a coarse positioner that moves the actuator arm relative to the storage disk;

a transducer assembly including a load beam, a flexure secured to the load beam, and a data transducer secured to the flexure;

a separately formed base plate securing the transducer assembly to the actuator arm, the base plate including (i) one or more edges, (ii) a pair of flex sections that cantilever away from at least one of the edges, the flex sections allowing the base plate to flex, and (iii) a pair of spaced apart positioner cavities that are positioned between the flex sections; and

a fine positioner secured to the base plate, the fine positioner being positioned in the positioner cavities, the fine positioner moving a portion of the base plate relative to the actuator arm.

7-8. (Canceled)

9. (Previously Presented) A disk drive comprising the head stack assembly of claim 6, and a storage disk.

10. (Original) The disk drive of claim 9 further comprising a control system that (i) directs current to the coarse positioner to move the actuator arm so that the data transducer is positioned near the target track and (ii) directs current to the fine positioner to move the base plate so that the data transducer is positioned on the target track.

11. (Original) The disk drive of claim 9 further comprising a control system that (i) directs current to the coarse positioner to move the actuator arm so that the data transducer is on the target track, and (ii) directs current to the fine positioner to selectively move the base plate to maintain the data transducer on the target track.

12. (Canceled)

13. (Previously Presented) The disk drive of claim 9 wherein the fine positioner is a piezoelectric motor.

14-21. (Canceled)

22. (Currently Amended) A disk drive, comprising:
an actuator arm;
a transducer assembly including a load beam and a data transducer coupled to the load beam;
a separately formed base plate that secures the transducer assembly to the actuator arm, the base plate including a flex section that allows the base plate to flex; and
a fine positioner that is secured to the base plate so that the fine positioner does not contact the flex section, the fine positioner selectively flexing at least a portion of the base plate.

23. (Previously Presented) The disk drive of claim 22 wherein the fine positioner includes a pair of piezoelectric motors.

24. (Previously Presented) The disk drive of claim 23 wherein the base plate includes a pair of flex sections that allow the base plate to flex, and wherein at least one of the piezoelectric motors is positioned substantially between the flex sections.

25. (Previously Presented) The disk drive of claim 24 wherein each of the

piezoelectric motors is positioned substantially between the flex sections.

26. (Previously Presented) The disk drive of claim 23 wherein the base plate includes a pair of flex sections that allow the base plate to flex, and wherein at least one of the flex sections is positioned substantially between the pair of piezoelectric motors.

27. (Previously Presented) The disk drive of claim 26 wherein each of the flex sections is positioned substantially between the pair of piezoelectric motors.

28. (Previously Presented) The disk drive of claim 23 wherein at least one of the piezoelectric motors is secured to the base plate under compression.

29. (Previously Presented) The disk drive of claim 23 wherein each of the piezoelectric motors is secured to the base plate under compression.

30. (Previously Presented) The disk drive of claim 23 wherein the base plate includes a plate mount that secures the base plate to the actuator arm, and wherein at least one of the piezoelectric motors is secured to the base plate substantially between the plate mount and the data transducer.

31. (Previously Presented) The disk drive of claim 30 wherein the piezoelectric motors are positioned substantially parallel to each other.

32. (Previously Presented) The disk drive of claim 23 wherein at least one of the piezoelectric motors includes a proximal end and a distal end, and wherein the proximal end and the distal end are the only portions of the at least one piezoelectric motor that contact the base plate.

33. (Previously Presented) The disk drive of claim 22 wherein the flex section is substantially U-shaped.

34. (Previously Presented) The disk drive of claim 22 wherein the flex section is substantially V-shaped.

35. (Previously Presented) The disk drive of claim 22 wherein the base plate includes a plate side, and wherein the flex section cantilevers away from the plate side.

36. (Previously Presented) The disk drive of claim 22 wherein the base plate includes a pair of plate sides and a pair of flex sections, and wherein each of the flex sections cantilevers away from a corresponding plate side.

37. (Currently Amended) A disk drive, comprising:
an actuator arm;
a transducer assembly including a load beam and a data transducer coupled to the load beam;
a separately formed base plate that secures the transducer assembly to the actuator arm; and
a first piezoelectric motor having a proximal end and a distal end, that ends being secured to the base plate so that the first piezoelectric motor is under compression, the first piezoelectric motor moving a portion of the base plate relative to the actuator arm.

38. (Previously Presented) The disk drive of claim 37 further comprising a controller that selectively directs current to the first piezoelectric motor, the first piezoelectric motor being under compression while the controller is not directing current to the first piezoelectric motor.

39. (Previously Presented) The disk drive of claim 37 wherein the proximal end and the distal end of the first piezoelectric motor are the only portions of the first piezoelectric motor that contact the base plate.

40. (Previously Presented) The disk drive of claim 39 further comprising a second piezoelectric motor and a second positioner cavity, and wherein the second piezoelectric motor has a proximal end and a distal end, the ends of the second piezoelectric motor being secured to the base plate so that the second piezoelectric motor is under compression.

41. (Previously Presented) The disk drive of claim 40 wherein the base plate includes a plate mount that secures the base plate to the actuator arm, and wherein at least one of the piezoelectric motors is secured to the base plate substantially between the plate mount and the data transducer.

42. (Previously Presented) The disk drive of claim 41 wherein the piezoelectric motors are substantially parallel to each other.

43. (Previously Presented) The disk drive of claim 40 wherein the base plate includes a pair of flex sections that allow the base plate to flex, and wherein the piezoelectric motors do not contact the flex sections.

44. (Previously Presented) The disk drive of claim 43 wherein at least one of the piezoelectric motors is positioned substantially between the flex sections.

45. (Previously Presented) The disk drive of claim 43 wherein at least one of the flex sections is positioned substantially between the piezoelectric motors.

46. (Previously Presented) The disk drive of claim 37 wherein the base plate includes a flex section that allows the base to flex, the flex section being substantially U-shaped.

47. (Previously Presented) The disk drive of claim 37 wherein the base plate includes a flex section that allows the base to flex, the flex section being substantially V-shaped.

48. (Previously Presented) The disk drive of claim 37 wherein the base plate includes (i) a plate side, and (ii) a flex section that allows the base plate to flex, the flex section cantilevering away from the plate side.

49. (Previously Presented) The disk drive of claim 37 wherein the base plate includes (i) a pair of plate sides, and (ii) a pair of flex sections that allow the base to flex, each of the flex sections cantilevering away from a corresponding plate side.

50. (Currently Amended) A disk drive, comprising:

an actuator arm;

a transducer assembly including a load beam and a data transducer coupled to the load beam;

a separately formed base plate that secures the transducer assembly to the actuator arm, the base plate including a plate mount that secures the base plate to the actuator arm; and

a pair of piezoelectric motors that are each secured to the base plate between the plate mount and the data transducer, the piezoelectric motors being substantially parallel to each other, the piezoelectric motors moving a portion of the base plate relative to the actuator arm.

51. (Previously Presented) The disk drive of claim 50 wherein each piezoelectric motor includes a proximal end and a distal end, wherein the ends of the piezoelectric motors are the only portions of the piezoelectric motors that contact the base plate.

52. (Previously Presented) The disk drive of claim 50 wherein the ends of at least one of the piezoelectric motors are secured to the base plate so that the at least one piezoelectric motor is under compression.

53. (Previously Presented) The disk drive of claim 50 wherein the base plate

includes a pair of flex sections that allow the base plate to flex, and wherein at least one of the piezoelectric motors does not contact either of the flex sections.

54. (Previously Presented) The disk drive of claim 53 wherein at least one piezoelectric motor is positioned between the flex sections.

55. (Previously Presented) The disk drive of claim 54 wherein at least one of the flex sections is substantially U-shaped.

56. (Previously Presented) The disk drive of claim 54 wherein the base plate includes a plate side, and wherein at least one of the flex sections cantilevers away from the plate side.

57. (Previously Presented) The disk drive of claim 53 wherein at least one of the flex sections is positioned substantially between the piezoelectric motors.

58. (Previously Presented) The disk drive of claim 57 wherein at least one of the flex sections is substantially V-shaped.

59. (Currently Amended) A disk drive comprising:
an actuator arm;
a transducer assembly including a load beam and a data transducer coupled to the load beam;
a separately formed base plate that secures the transducer assembly to the actuator arm, the base plate including a positioner cavity that extends through the base plate; and
a fine positioner that is secured to the base plate so that the fine positioner is positioned over at least a portion of the positioner cavity, the fine positioner selectively flexing at least a portion of the base plate.

60. (Previously Presented) The disk drive of claim 59 wherein the fine

positioner includes a pair of piezoelectric motors.

61. (Previously Presented) The disk drive of claim 60 wherein the base plate includes a pair of flex sections that allow the base plate to flex, and wherein at least one of the piezoelectric motors is positioned substantially between the flex sections.

62. (Previously Presented) The disk drive of claim 61 wherein each of the piezoelectric motors is positioned substantially between the flex sections.

63. (Previously Presented) The disk drive of claim 60 wherein the base plate includes a pair of flex sections that allow the base plate to flex, and wherein at least one of the flex sections is positioned substantially between the pair of piezoelectric motors.

64. (Previously Presented) The disk drive of claim 63 wherein each of the flex sections is positioned substantially between the pair of piezoelectric motors.

65. (Previously Presented) The disk drive of claim 60 wherein at least one of the piezoelectric motors is secured to the base plate under compression.

66. (Previously Presented) The disk drive of claim 60 wherein each of the piezoelectric motors is secured to the base plate under compression.

67. (Currently Amended) A method for increasing the positioning accuracy of a disk drive, the method comprising the steps of:

securing a transducer assembly to an actuator arm with a separately formed base plate having a flex section that flexes;

securing a fine positioner to the base plate so that the fine positioner is not in contact with the flex section; and

flexing the flex section with the fine positioner to cause at least a portion of the base plate to move relative to the actuator arm.

68. (Previously Presented) The method of claim 67 wherein the step of securing the fine positioner includes using a piezoelectric motor as the fine positioner.

69. (Previously Presented) The method of claim 67 wherein the step of securing the transducer assembly includes providing the base plate having a pair of spaced apart flex sections that flex, and wherein the step of flexing the flex section includes moving the fine positioner to flex each of the flex sections to cause at least a portion of the base plate to move relative to the actuator arm.

70. (Previously Presented) The method of claim 69 wherein the step of securing the fine positioner includes using a pair of spaced apart piezoelectric motors as the fine positioner and positioning the piezoelectric motors substantially between the flex sections.

71. (Previously Presented) The method of claim 70 wherein the step of securing the transducer assembly includes providing the base plate having a plate side, and cantilevering the flex section away from the plate side.

72. (Previously Presented) The method of claim 69 wherein the step of securing the fine positioner includes using a pair of piezoelectric motors as the fine positioner and positioning the flex sections substantially between the piezoelectric motors.

73. (Previously Presented) The method of claim 67 wherein the step of securing the fine positioner includes securing the fine positioner to the base plate so that the fine positioner is under compression.

74. (Previously Presented) The method of claim 67 wherein the step of securing the transducer assembly includes using a plate mount of the base plate secure the transducer assembly to the actuator arm, and wherein the step of securing the fine positioner includes (i) positioning the fine positioner to the base plate substantially

between the plate mount and the data transducer, and (ii) providing a pair of substantially parallel, spaced apart piezoelectric motors as the fine positioner.

75. (New) A disk drive, comprising:

an actuator arm;

a data transducer;

a load beam that is coupled to and supports the data transducer, the load beam having a thickness;

a base plate that secures the load beam to the actuator arm, the base plate having a thickness that is at least approximately three times the thickness of the load beam, the base plate including a flex section that allows the base plate to flex; and

a fine positioner that is secured to the base plate so that the fine positioner does not contact the flex section, the fine positioner selectively flexing at least a portion of the base plate.
